

What is claimed is:

1. A disposable for an apheresis system comprising blood processing channel, said disposable comprising:

5 a blood processing vessel positionable in said channel and comprising a blood-related port communicating with an interior of said blood processing vessel; and

a support associated with said blood-related port, interfacing with an exterior surface of said blood processing vessel in overlapping relation with a portion of said blood processing vessel.

2. A ^{system}disposable, as claimed in Claim 1, wherein:

said support has a rigidity greater than a rigidity of a portion of said blood processing vessel adjacent said blood-related port.

3. A ^{system}disposable, as claimed in Claim 1, wherein:

said support is formed from a material having a greater durometer rating than a material forming a main body of said blood processing vessel.

4. A disposable, as claimed in Claim 1, wherein:

said support comprises means for reducing deflection of said blood processing vessel in a region of said blood-related port when said blood processing vessel is pressurized within said blood processing channel.

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5. A disposable, as claimed in Claim 1, wherein:
said blood processing channel comprises first and second
channel sidewalls, wherein channel housing further comprises
a blood-related port slot which intersects with one of said
first and second channel sidewalls and a recess formed on said
one of said first and second channel sidewalls and containing
at least part of said blood-related port slot, wherein said
support of said blood processing vessel is positioned within
said recess.

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6. A disposable, as claimed in Claim 1, wherein:
a thickness of said support is substantially equal to a
thickness of said recess.

7. A disposable, as claimed in Claim 1, wherein said
blood processing vessel further comprises:

a blood inlet port; and

a control port for controlling a radial position of
at least one interface between red blood cells and an adjacent
blood component type, wherein said blood-related port assembly
comprises at least said control port.

8. A disposable, as claimed in Claim 7, wherein:

said support comprises means for disposing said control
port at a predetermined position within said blood processing
channel and independent of a portion of said blood processing
vessel through which said interface control port extends.

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8. ^{system} A ~~disposable~~, as claimed in Claim 7, wherein:

said control port extends beyond an inner wall of said blood processing vessel into an interior of said blood processing vessel.

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10. ^{System} A ~~disposable~~, as claimed in Claim 1, wherein:

said blood-related port comprises at least one of a blood inlet port to said blood processing vessel, a red blood cell outlet port to said blood processing vessel, and a control port to said blood processing vessel for controlling a radial position of at least one interface between red blood cells and an adjacent blood component type.

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11. ^{System} A ~~disposable~~, as claimed in Claim 1, wherein:

said support is fixedly attached to said blood-related port.

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12. ^{System} A ~~disposable~~, as claimed in Claim 1, wherein:

said support is integrally formed with said blood-related port.

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13. ^{System} A ~~disposable~~, as claimed in Claim 1, wherein:

said support is disposed about said blood-related port.

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14. ^{System} A ~~disposable~~, as claimed in Claim 1, wherein:

said support comprises means for disposing said blood-related port at a predetermined position within said blood processing channel and independent of a portion of said blood processing vessel through which said blood-related port extends.

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15. A disposable for an apheresis system comprising a blood processing channel, said disposable comprising:

a blood processing vessel positionable in said blood processing channel and comprising:

5 first and second radially spaced sidewalls when said blood processing vessel is positioned in said blood processing channel;

a blood inlet port interfacing with one of said first and second sidewalls;

10 means for directing blood through said blood inlet port and within said blood processing vessel at an angle relative to a reference line extending perpendicularly to a portion of said blood processing vessel adjacent said blood inlet port; and

15 a first blood component outlet port.

16. A disposable, as claimed in Claim 15, wherein:
said angle is no greater than about 90°.

17. A disposable, as claimed in Claim 15, wherein:
said means for directing comprises means for directing blood through said blood inlet port and into said blood processing vessel in a direction which is substantially parallel with a direction of flow adjacent said blood inlet port.

18. A disposable, as claimed in Claim 15, wherein:
said means for directing comprises a vane disposed within
said blood processing vessel between first and second
sidewalls of said blood processing vessel.

19. A disposable, as claimed in Claim 18, wherein:
said vane is defined by a surface which is substantially
parallel with a sidewall of said blood processing vessel
through which said blood inlet port extends.

20. A disposable, as claimed in Claim 15, wherein:
said means for directing comprises means for directing
blood through said blood inlet port and into said blood
processing vessel in a direction which is substantially
5 parallel to a sidewall of said blood processing vessel through
which said blood inlet port extends.

21. A disposable, as claimed in Claim 15, wherein:
said disposable further comprises a second blood
component outlet port, said first and second blood component
outlet ports being disposed on opposite sides of said blood
5 inlet port.

22. A disposable, as claimed in Claim 21, wherein:
said means for directing is further in a direction of
said first blood component outlet port, and wherein a flow
within said blood processing vessel to said second blood
5 component outlet port passes by said blood inlet port.

23. A disposable, as claimed in Claim 15, wherein:

said blood processing vessel comprises inner and outer sidewalls, said blood inlet port interfacing with said inner sidewall, and wherein said means for directing further
5 comprises means for reducing an effect of introducing said blood into said blood processing vessel on a flow along said outer sidewall past said blood inlet port.

24. A disposable, as claimed in Claim 15, wherein:

said blood processing vessel comprises first and second sidewalls, wherein said blood inlet port extends through one of said first and second sidewalls into an interior of said
5 blood processing vessel, and wherein said means for directing comprises a generally vertically disposed slot.

25. A disposable, as claimed in Claim 15, wherein:

said first and second sidewalls are substantially planar surfaces and generally vertically extending.

26. A disposable for an apheresis system comprising a channel , said disposable comprising:

a blood processing vessel positionable in said channel and comprising:

5 a whole blood inlet port;

a first blood component outlet port; and

a first tab extending vertically beyond adjacent portions of said blood processing vessel a sufficient distance whereby said first tab extends beyond said channel when said blood processing vessel is positioned within said channel.

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27. A disposable, as claimed in Claim 26, wherein:

said blood processing vessel comprises a seal formed along an upper edge of said blood processing vessel comprising a joinder of overlapping portions of said blood processing vessel, said first tab extending upwardly from said seal.

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28. A disposable, as claimed in Claim 27, wherein:

said first tab is integrally formed with said seal.

29. A disposable, as claimed in Claim 26, wherein:

said first tab comprises at least one grip enhancing member.

30. A disposable, as claimed in Claim 26, further comprising:

a plurality of said first tabs spaced along a length of said blood processing vessel.

31. A disposable for an apheresis system comprising a channel , said disposable comprising:

a blood processing vessel positionable in said channel and comprising:

5 first and second ends;

a first connector positioned between said first and second ends and communicating with an interior of said blood processing vessel;

10 a second connector positioned between said first and second ends, communicating with said interior of said processing vessel, and engaged with said first connector;

a blood inlet port communicating with said interior of said blood processing vessel and positioned between said first and second connectors; and

15 a first blood component outlet port communicating with said interior of said blood processing vessel and positioned between said first and second connectors.

32. A disposable, as claimed in Claim 31, wherein:

said blood processing vessel further comprises a control port positioned adjacent said first blood component outlet port for controlling a radial position of at least one interface between red blood cells and an adjacent blood component type, said first blood component outlet port and said control port being positioned between said first and second connectors, wherein at least a portion of a flow to said control port is in a direction opposite a flow to said first blood component outlet port.

33. A disposable, as claimed in Claim 31, wherein:

said first and second connectors are proximate said first and second ends, respectively, of said blood processing vessel, said blood processing vessel further comprising a plasma outlet port which interfaces with said inner sidewall of said blood processing vessel and is positioned between said second connector and said second end.

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